Improved Hypertension Control: Cause for Some Celebration

Aram V. Chobanian


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Brent M. Egan et al. JAMA. 2010;303(20):2043.
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Aram V. Chobanian, MD

Hypertension has long been recognized as a major risk factor for cardiovascular diseases. Advances in drug therapy have provided clinicians with the ability to lower blood pressure (BP) to goal levels in most persons with hypertension. In addition, many intervention trials have demonstrated large benefits of BP lowering in reducing the incidence of cardiovascular events independently of age, sex, type or severity of hypertension, or presence of comorbid conditions. Nevertheless, the control of hypertension in the United States and throughout the world has been grossly inadequate.

The article by Egan and colleagues in this issue of JAMA provides new information on hypertension awareness, treatment, and control rates compiled from the 2007-2008 National Health and Nutrition Survey (NHANES). Data were derived from a representative sample of individuals aged 18 years or older and compared with the findings from NHANES surveys dating back to 1988. The results suggest considerable improvement in hypertension treatment and control rates in the period since the 1999-2004 survey, with awareness of hypertension increasing from 72% to 81%, treatment from 61% to 73%, and control (defined by systolic BP level of <140 mm Hg and diastolic BP level of <90 mm Hg) from 35% to 50%. The 50% control rate is particularly impressive and meets the Healthy People 2010 objective, which even recently seemed unachievable.

The study by Egan et al also indicates a substantial reduction in BP in the hypertension group as a whole, the decrease averaging 7/4 mm Hg between these same periods. The percentage of individuals with the more severe category of stage 2 hypertension also decreased from 21% to 12%. The highest percentage of patients treated and not controlled for hypertension was in the group aged 60 years or older.

These NHANES data have some limitations inherent in the study design. The hypertension sample size was relatively small, particularly in the group younger than 40 years. Blood pressures were obtained by a physician on a single visit and not confirmed subsequently; therefore, hypertension prevalence was probably overestimated. Individuals with diabetes were not considered to have hypertension if their BP was less than 140/90 mm Hg; however, they were included in the controlled hypertension group even if they did not receive antihypertensive therapy. Nevertheless, comparison of data between different periods would seem valid for demonstrating trends because the methods used in the different NHANES study periods appear broadly comparable, and appropriate age adjustments of data were made.

The reasons for the accelerated improvement in hypertension control rates are unclear. Blood pressure control may be affected by factors such as inadequate access to health care, cost of therapy, poor adherence to medications, drug adverse effects, clinician inertia, disregard of treatment guidelines, inadequate education of clinicians and patients, and unhealthy lifestyles. The magnitude of the changes reported by Egan et al suggests that several factors probably were involved.

Major changes toward healthier lifestyles have not occurred in the United States during the periods covered by this study and would not appear responsible for the observed improvement. Importantly, the proportion of individuals with hypertension receiving drug treatment increased substantially in concert with the increased percentage who achieved goal BP levels. The availability of a broad array of effective antihypertensive drugs with excellent tolerability has made treatment easier than in the past. Significant adverse effects are uncommon with many of the drugs, and cost has become less of an issue with the availability of generic preparations for most antihypertensive drug classes. In addition, many combination drugs have been introduced that can facilitate medication adherence for the patient.

Other factors that may have been involved include increased use of electronic systems and other approaches to provide feedback reminders to patients and clinicians regarding patient appointments, prescription refills, the need to advance therapy based on existing national guidelines, auditing of records, and adherence to Health Plan Employer Data and Information Set performance standards and their enforcement by insurers and managed care organizations. Likewise, the increased use of nonphysician health care professionals such as nurse cli-

See also p 2043.
nicians, physician assistants, nutritionists, and pharmacists as part of the management team, improvements in patient education, and increased home BP monitoring could have contributed as well.

The prevalence of hypertension in the adult US population increased substantially between the 1988-1994 and 1999-2004 NHANES surveys. This increase more than offset the increase in control rates and, as a result, the total number of persons with uncontrolled hypertension actually increased despite marked advances in drug therapy, a phenomenon recently designated as the “hypertension paradox.” The current study shows a reversal of this trend, with increases in both rates and absolute numbers of persons with controlled hypertension in association with substantial reductions in the number of individuals with uncontrolled hypertension. Assuming that hypertension prevalence has not changed since the 1999-2004 survey, the current studies suggest that the number of adults with controlled hypertension in the United States has increased substantially. For instance, among the estimated 65 million adults with hypertension in the 1999-2004 survey, the number with controlled hypertension was estimated at 23 million and with uncontrolled hypertension was 42 million, whereas in the 2007-2008 survey, the number with controlled hypertension increased to 33 million and those with uncontrolled hypertension decreased to approximately 32 million.

Although these findings need to be confirmed by subsequent studies, they should be a cause for celebration, especially given longstanding concerns over failure to achieve better control of hypertension. Several organizations and groups, including the National Heart, Lung, and Blood Institute (NHLBI), American Heart Association, American Society of Hypertension, medical societies, public health and community groups, pharmaceutical firms, and of course the medical profession and clinical community, have worked diligently to improve hypertension control. Their efforts, particularly the NHLBI and its Hypertension Education Program, certainly have been essential to achieving the progress that has been made.

However, many challenges remain. More than 30% of the US adult population has hypertension and at least as many have prehypertension, which is also associated with increased risk of cardiovascular diseases and which typically progresses to hypertension. As the population ages, hypertension prevalence will increase further unless effective measures are taken to diminish the age-associated increase in BP. Although lifestyle changes can reduce BP and the risk of developing hypertension, successful behavioral approaches to modify lifestyles on a population basis have lagged far behind the advances in the drug treatment of hypertension. Societal changes such as the rapid growth of the fast food industry, increased availability of prepared foods, and decreases in physical activity have had major adverse effects on cardiovascular risk factors. Programs to incorporate healthier lifestyles into daily life need to be intensified on a national basis to deal with not only hypertension but also obesity, diabetes, dyslipidemias, and cardiovascular diseases. Recent progress has been made in this regard, such as the increased emphasis on childhood obesity as a major health problem, proposed new standards for labeling and limiting salt content of foods, and efforts to limit intake of soft drinks with high sugar content. But much more needs to be done. In the long run, the far superior approach to controlling hypertension and cardiovascular diseases will be prevention rather than treatment.

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REFERENCES